Special Situations

- Cardiovascular diseases
- Renal disease
- Diabetes mellitus
- Dyslipidemia
- Sleep apnea
- Bronchial asthma
- Gout
- Surgery
- Various chemical agents

Cardiovascular Diseases

- Cerebrovascular disease
  - Indication for treatment, except immediately after ischemic cerebral infarction.
- Coronary artery disease
  - Benefits of therapy well established.
- Left ventricular hypertrophy
  - Antihypertensive agents (except direct vasodilators) indicated.
  - Reduced weight and decreased sodium intake beneficial.

Cardiovascular Diseases (continued)

- Cardiac failure
  - ACE inhibitors, especially with digoxin or diuretics, shown to prevent subsequent heart failure.
- Peripheral arterial disease
  - Limited or no data available.

Renal Disease

- Hypertension may result from renal disease that reduces functioning nephrons.
- Evidence shows a clear relationship between high blood pressure and end-stage renal disease.
- Blood pressure should be controlled to < 130/85 mm Hg or lower (< 125/75 mm Hg) in patients with proteinuria in excess of 1 gram per 24 hours.
- ACE inhibitors work well to control blood pressure and slow progression of renal failure.

Diabetes Mellitus

- Drug therapy should begin along with lifestyle modifications to reduce blood pressure to < 130/85 mm Hg.
- ACE inhibitors, α-blockers, calcium antagonists, and low-dose diuretics are preferred.
- Insulin resistance or high peripheral insulin levels may cause hypertension, which can be treated with lifestyle changes, insulin-sensitizing agents, vasodilating antihypertensive drugs, and lipid-lowering agents.

Dyslipidemia

- Coexistence of hypertension and dyslipidemia requires aggressive management.
- Emphasis should be on weight loss; reduced intake of saturated fat, cholesterol, sodium, and alcohol; and increased physical activity.
- Lifestyle changes and hypolipidemic agents should be used to reach appropriate goals.

Sleep Apnea

- Obstructive sleep apnea is more common in patients with hypertension and is associated with several adverse clinical consequences.
- Improved hypertension control has been reported following treatment of sleep apnea.

Bronchial Asthma or Chronic Airway Disease

- Elevated blood pressure is common in acute asthma and is possibly related to treatment with systemic corticosteroids or β-agonists.
- β-blockers and α-β-blockers may exacerbate asthma.
- ACE inhibitors only rarely induce bronchospasm.
- Over-the-counter medications are generally safe in limited doses for patients on drug therapy.

Gout

- Diuretics can increase serum uric acid levels.
- Diuretics should be avoided in patients with gout.
- Diuretic-induced hyperuricemia does not require treatment in the absence of gout or urate stones.

Patients Undergoing Surgery

- When possible, surgery should be delayed until blood pressure is < 180/110 mm Hg.
- Those not on prior drug therapy may be best treated with cardioselective β-blockers before and after surgery.
- Those with controlled blood pressure should continue medication until surgery and begin as soon after surgery as possible.

Cocaine and Amphetamines

- Cocaine abuse must be considered in patients presenting to the emergency department with hypertension-related problems.
- Nitroglycerin is indicated to reverse cocaine-related coronary vasoconstriction.
- Acute amphetamine toxicity is similar to that of cocaine but longer in duration.
- Ongoing cocaine abuse does not appear to cause chronic hypertension.

Immunosuppressive Agents

- Immunosuppressive regimens produce widespread vasoconstriction in both transplant and nontransplant situations.
- Treatment is based on vasodilation including dihydropyridine calcium antagonists.

Erythropoietin

- Erythropoietin often increases blood pressure in treatment of patients with end-stage renal disease.
- Management includes optimal volume control, antihypertensive agents, and reducing erythopoietin dose or changing method of administration.

Other Chemical Agents That May Induce Hypertension

- Mineralocorticoids and derivatives
- Anabolic steroids
- Monoamine oxidase inhibitors
- Lead
- Cadmium
- Bromocriptine

Summary of Chapter 4

- Racial and ethnic groups are growing segments of our society. The prevalence of hypertension and control rates differ across groups. Clinicians should be aware of social and cultural factors when managing hypertension.
- Guidelines are provided for management of children and women with hypertension.
- In older persons, diuretics are preferred and long-acting dihydropyridine calcium antagonists may be considered.

Summary of Chapter 4 (continued)

- Specific therapy for patients with left ventricular hypertrophy, coronary artery disease, and heart failure are outlined.
- Patients with renal insufficiency with greater than 1 g/day of proteinuria should be treated to a goal of 125/75 mm Hg; those with less proteinuria should be treated to 130/85 mm Hg. ACE inhibitors have additional renoprotective effects.
- Patients with diabetes should be treated to a therapy goal of below 130/85 mm Hg.

A Populationwide Strategy

A populationwide strategy to reduce overall blood pressure by only a few mm Hg could affect overall cardiovascular morbidity and mortality as much as or more than treatment alone.